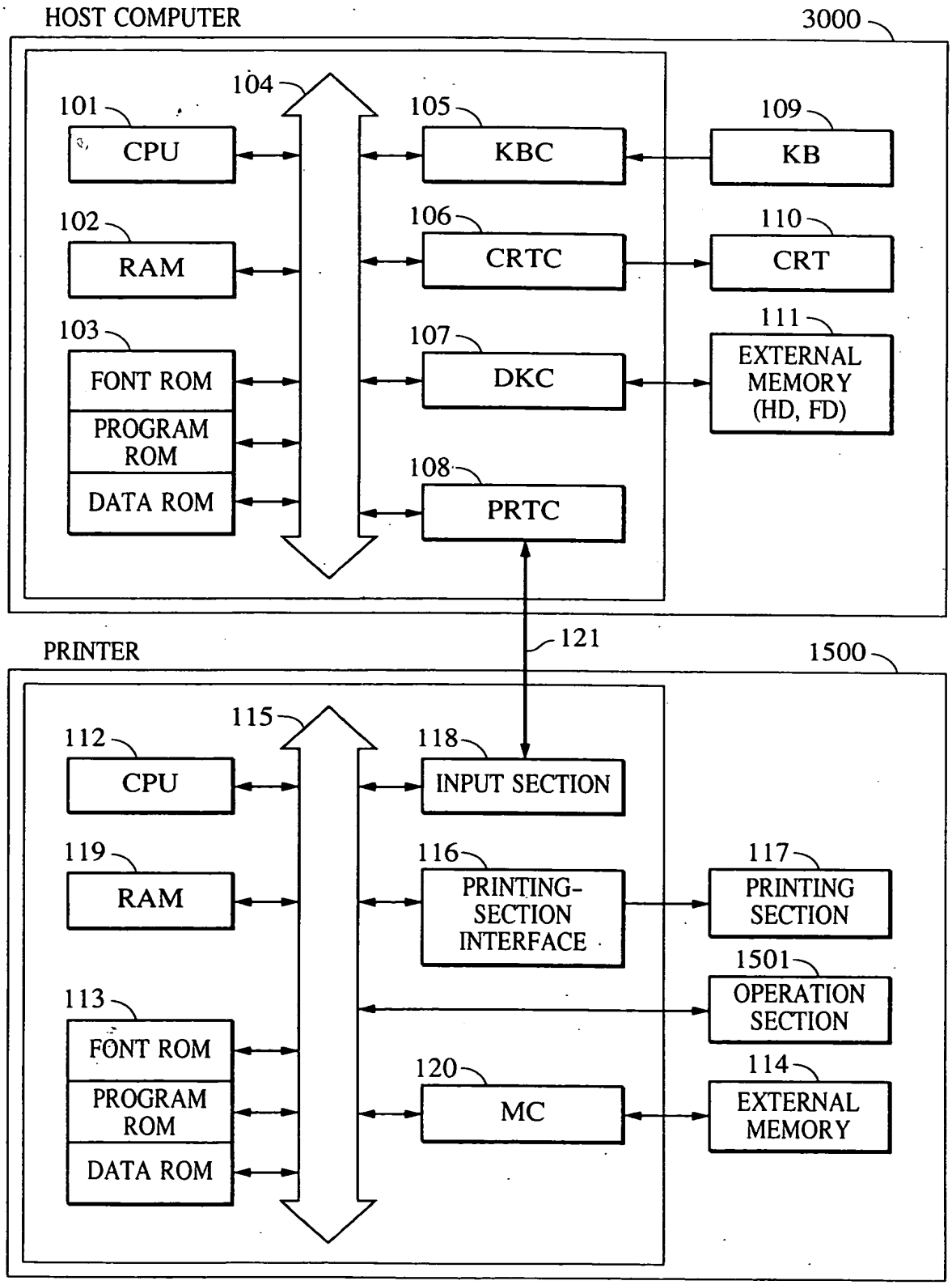
HOST COMPUTER
3000
101
CPU
104
105
KBC
109
KB
102
RAM
106
CRTC
110
CRT
103
FONT ROM
PROGRAM ROM
DATA ROM
107
DKC
111
EXTERNAL MEMORY (HD, FD)
108
PRTC
121
PRINTER
1500
112
CPU
115
118
INPUT SECTION
119
RAM
116
PRINTING-SECTION INTERFACE
117
PRINTING SECTION
1501
OPERATION SECTION
113
FONT ROM
PROGRAM ROM
DATA ROM
120
MC
114
EXTERNAL MEMORY

FIG. 1

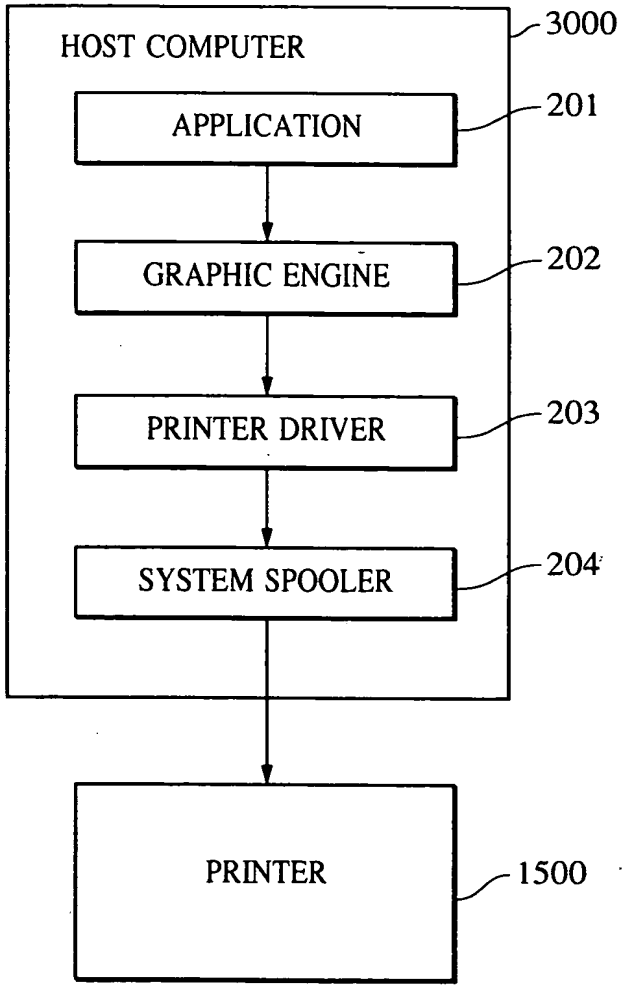
HOST COMPUTER
3000
APPLICATION
201
GRAPHIC ENGINE
202
PRINTER DRIVER
203
SYSTEM SPOOLER
204
PRINTER
1500

FIG. 2

DOCOT "US2006960

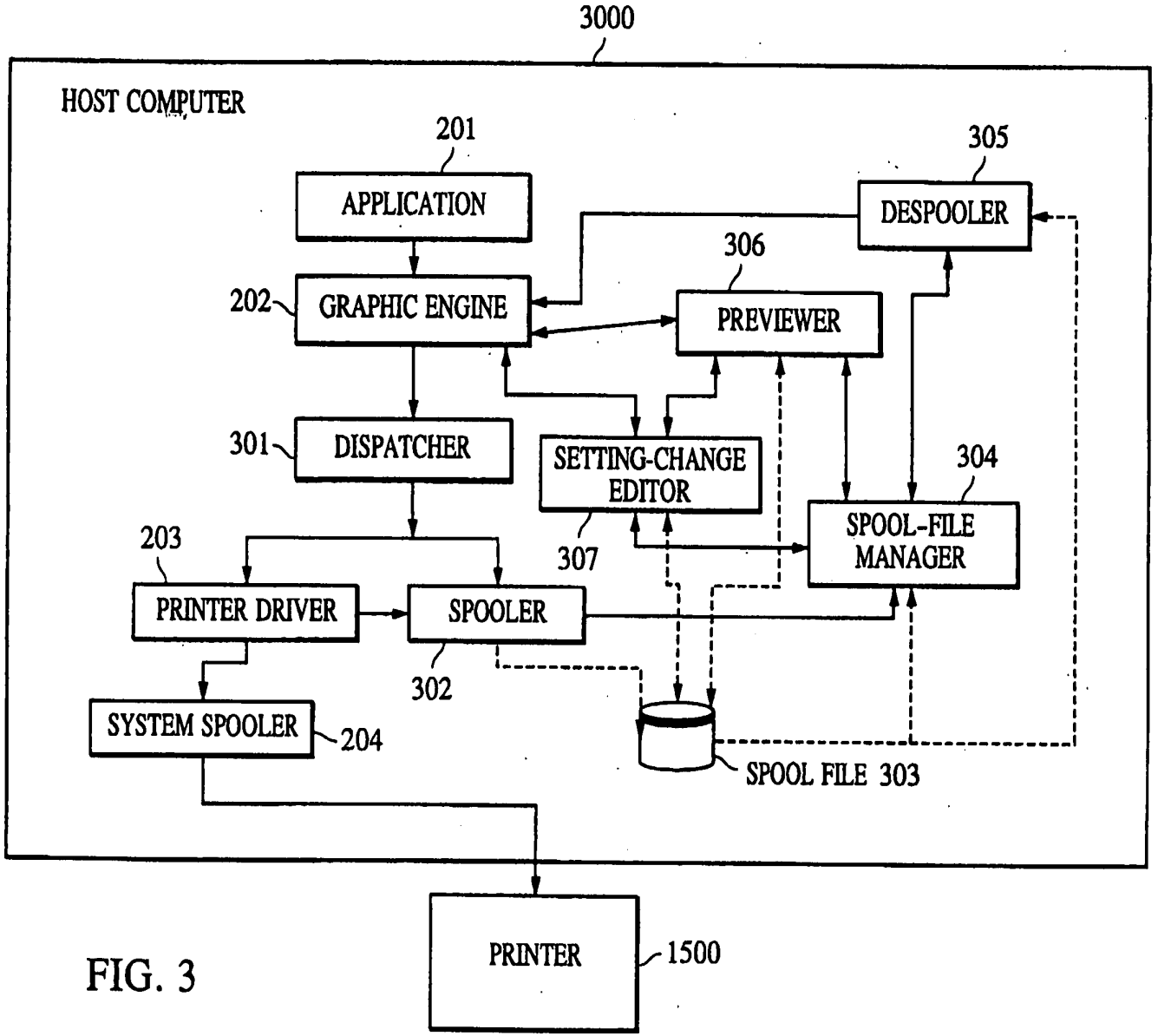

FIG. 3

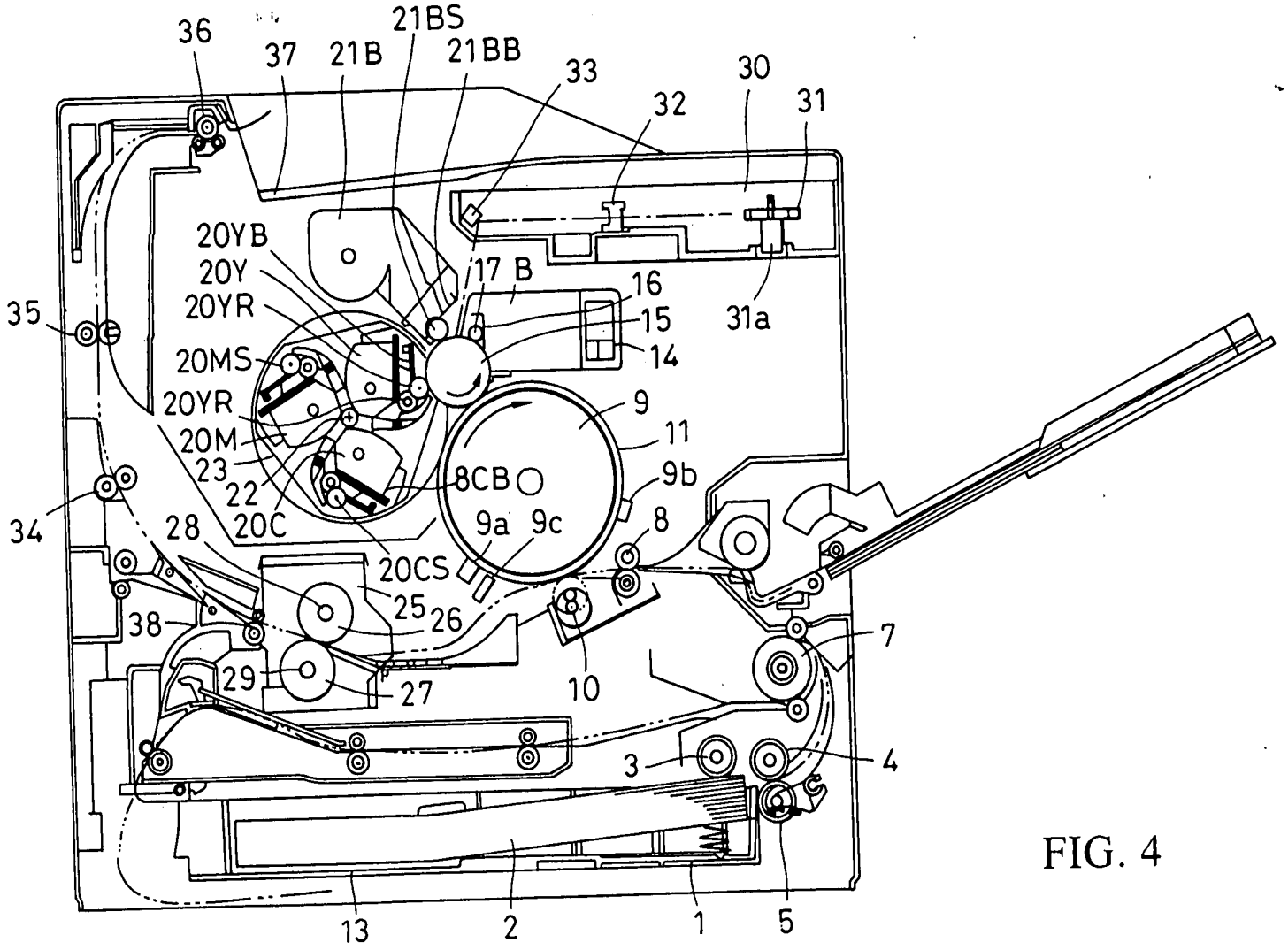
36
37
21B
21BS
21BB
33
32
30
31
20YB
20Y
20YR
17 B
16
15
14
31a
35
20MS
20YR
20M
23
22
20C
8CB
9
11
9b
8
9a
9c
20CS
34
28
25
26
38
29
27
10
7
3
4
13
2
1
5

FIG. 4

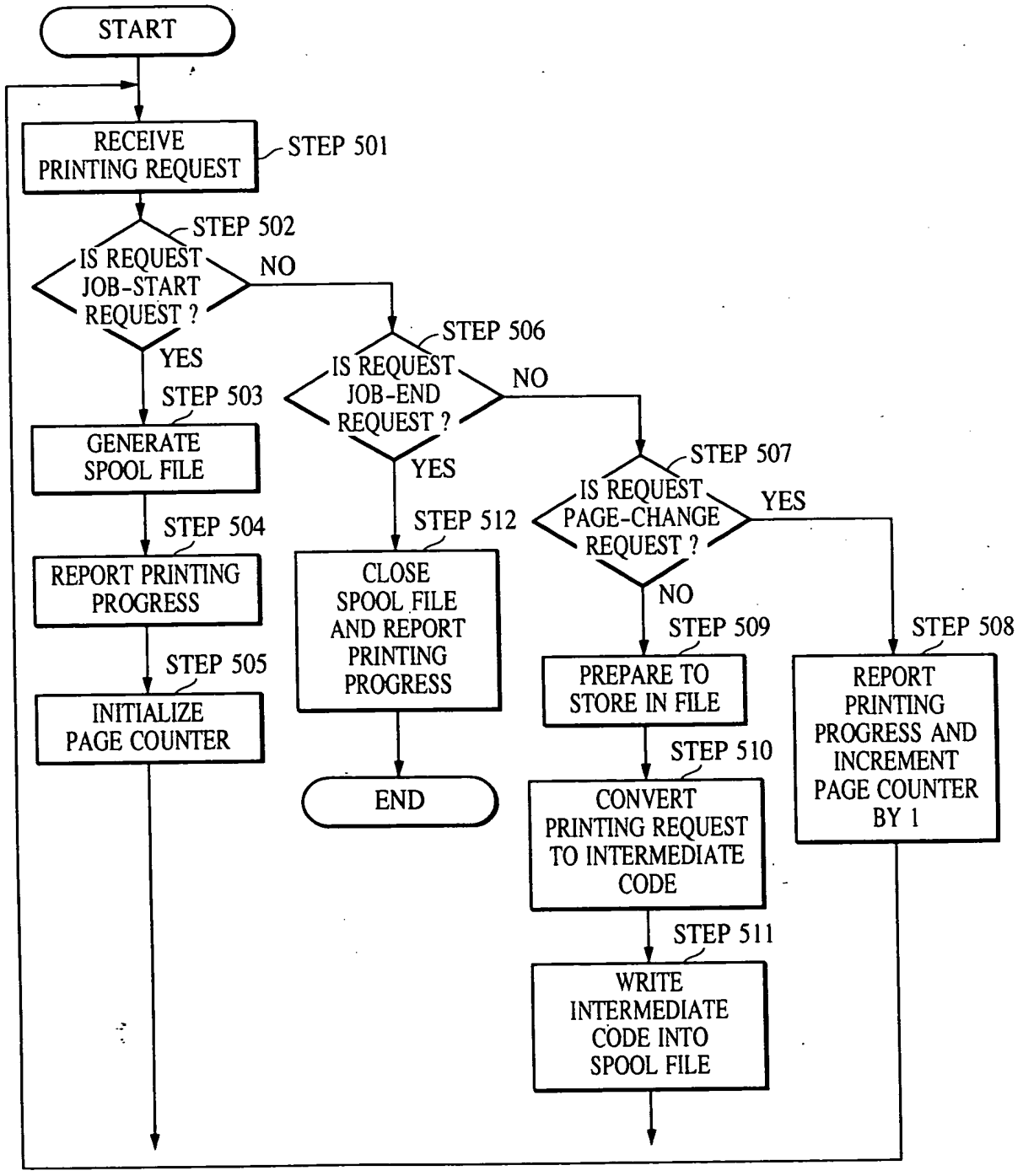
START
RECEIVE PRINTING REQUEST
STEP 501
STEP 502
IS REQUEST JOB-START REQUEST ?
NO
YES
STEP 503
GENERATE SPOOL FILE
STEP 504
REPORT PRINTING PROGRESS
STEP 505
INITIALIZE PAGE COUNTER
STEP 506
IS REQUEST JOB-END REQUEST ?
NO
YES
STEP 512
CLOSE SPOOL FILE AND REPORT PRINTING PROGRESS
END
STEP 507
IS REQUEST PAGE-CHANGE REQUEST ?
YES
NO
STEP 509
PREPARE TO STORE IN FILE
STEP 510
CONVERT PRINTING REQUEST TO INTERMEDIATE CODE
STEP 511
WRITE INTERMEDIATE CODE INTO SPOOL FILE
STEP 508
REPORT PRINTING PROGRESS AND INCREMENT PAGE COUNTER BY 1

FIG. 5

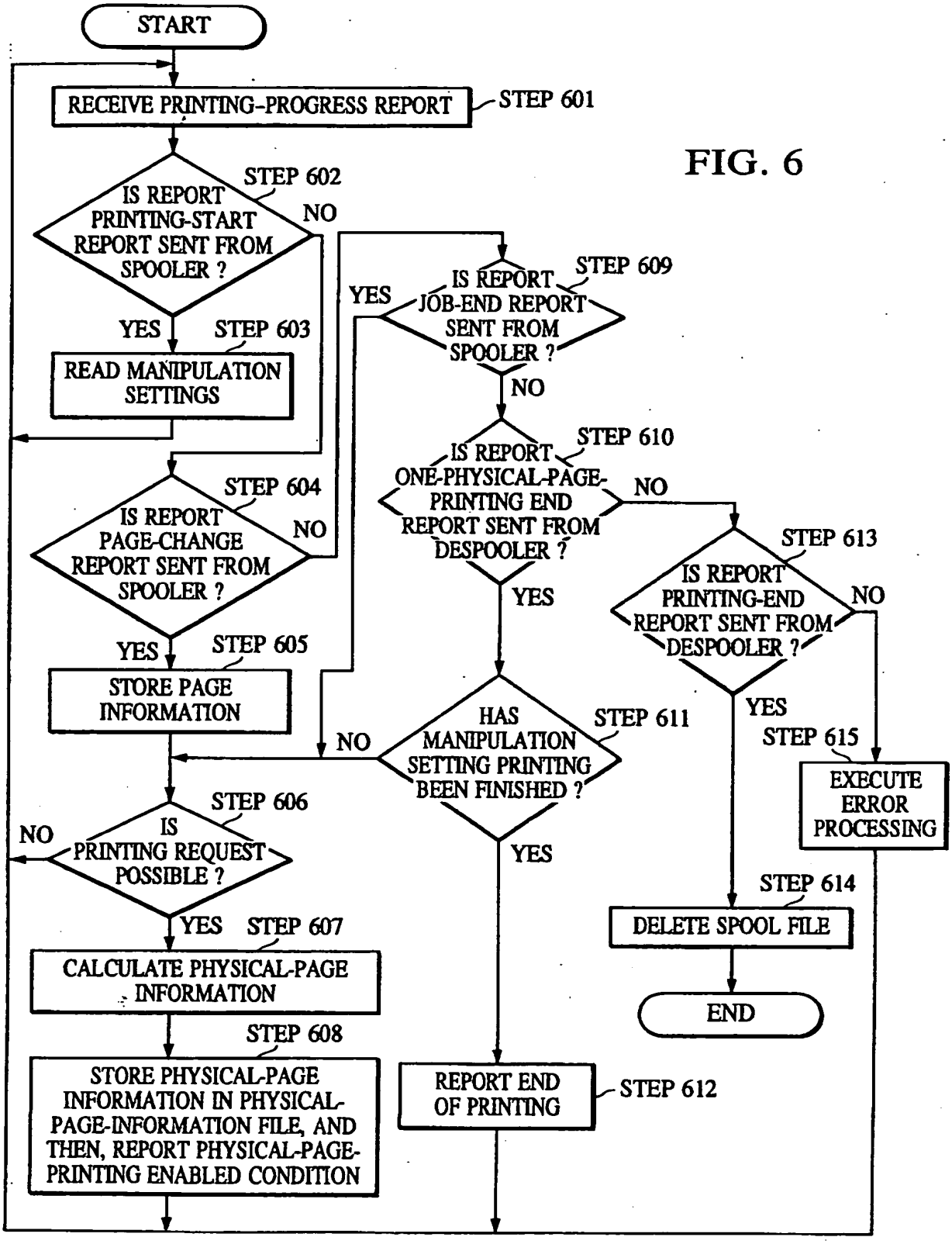
START
RECEIVE PRINTING-PROGRESS REPORT
STEP 601
IS REPORT PRINTING-START REPORT SENT FROM SPOOLER ?
STEP 602
NO
YES
READ MANIPULATION SETTINGS
STEP 603
IS REPORT PAGE-CHANGE REPORT SENT FROM SPOOLER ?
STEP 604
NO
YES
STORE PAGE INFORMATION
STEP 605
IS PRINTING REQUEST POSSIBLE ?
STEP 606
NO
YES
CALCULATE PHYSICAL-PAGE INFORMATION
STEP 607
STORE PHYSICAL-PAGE INFORMATION IN PHYSICAL-PAGE-INFORMATION FILE, AND THEN, REPORT PHYSICAL-PAGE-PRINTING ENABLED CONDITION
STEP 608
IS REPORT JOB-END REPORT SENT FROM SPOOLER ?
STEP 609
YES
NO
IS REPORT ONE-PHYSICAL-PAGE-PRINTING END REPORT SENT FROM DESPOOLER ?
STEP 610
NO
YES
HAS MANIPULATION SETTING PRINTING BEEN FINISHED ?
STEP 611
NO
YES
REPORT END OF PRINTING
STEP 612
IS REPORT PRINTING-END REPORT SENT FROM DESPOOLER ?
STEP 613
NO
YES
EXECUTE ERROR PROCESSING
STEP 615
DELETE SPOOL FILE
STEP 614
END

FIG. 6

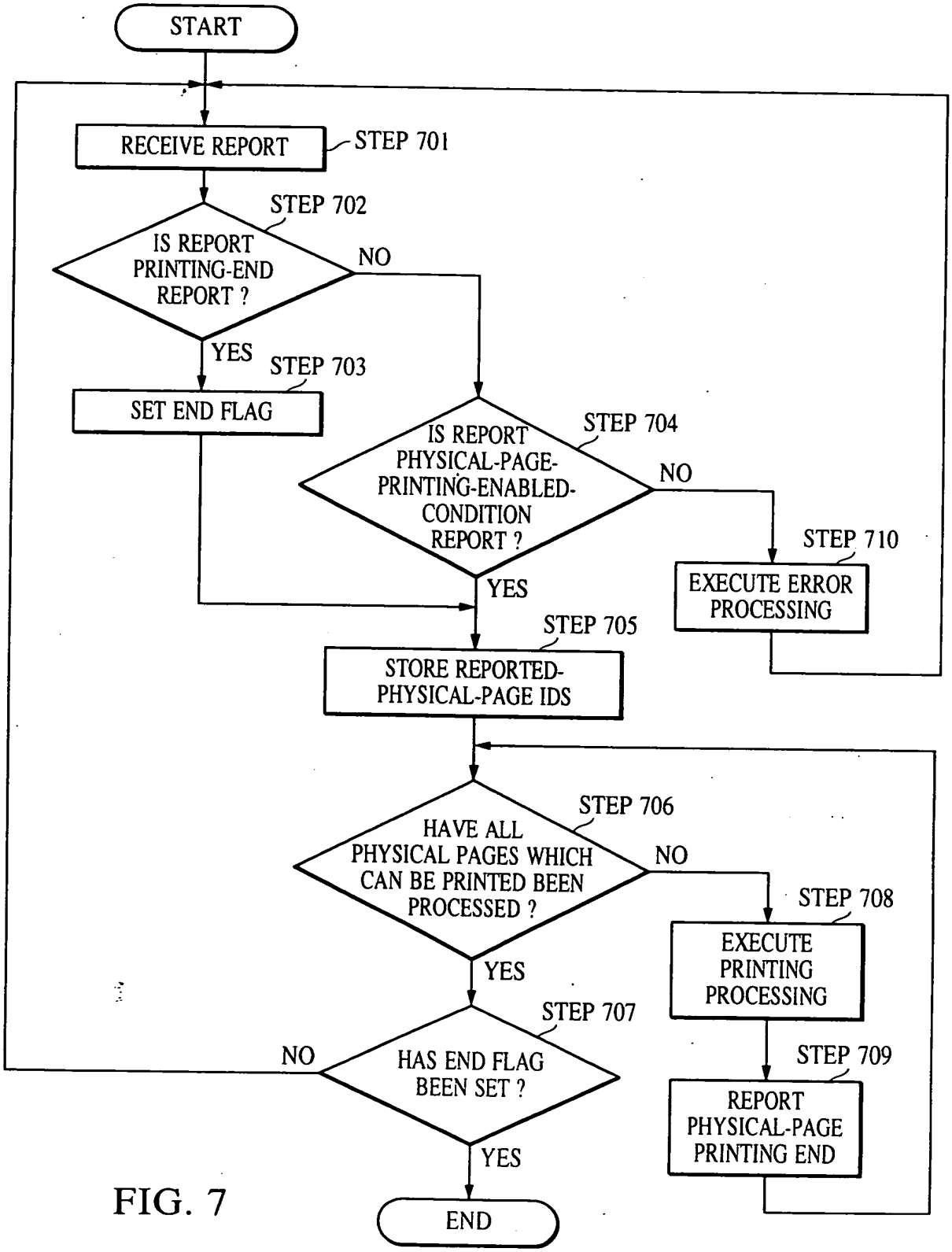
START
RECEIVE REPORT
STEP 701
STEP 702
IS REPORT PRINTING-END REPORT ?
NO
YES
STEP 703
SET END FLAG
STEP 704
IS REPORT PHYSICAL-PAGE-PRINTING-ENABLED-CONDITION REPORT ?
NO
STEP 710
EXECUTE ERROR PROCESSING
YES
STEP 705
STORE REPORTED-PHYSICAL-PAGE IDS
STEP 706
HAVE ALL PHYSICAL PAGES WHICH CAN BE PRINTED BEEN PROCESSED ?
NO
STEP 708
EXECUTE PRINTING PROCESSING
YES
STEP 707
HAS END FLAG BEEN SET ?
NO
STEP 709
REPORT PHYSICAL-PAGE PRINTING END
YES
END

FIG. 7

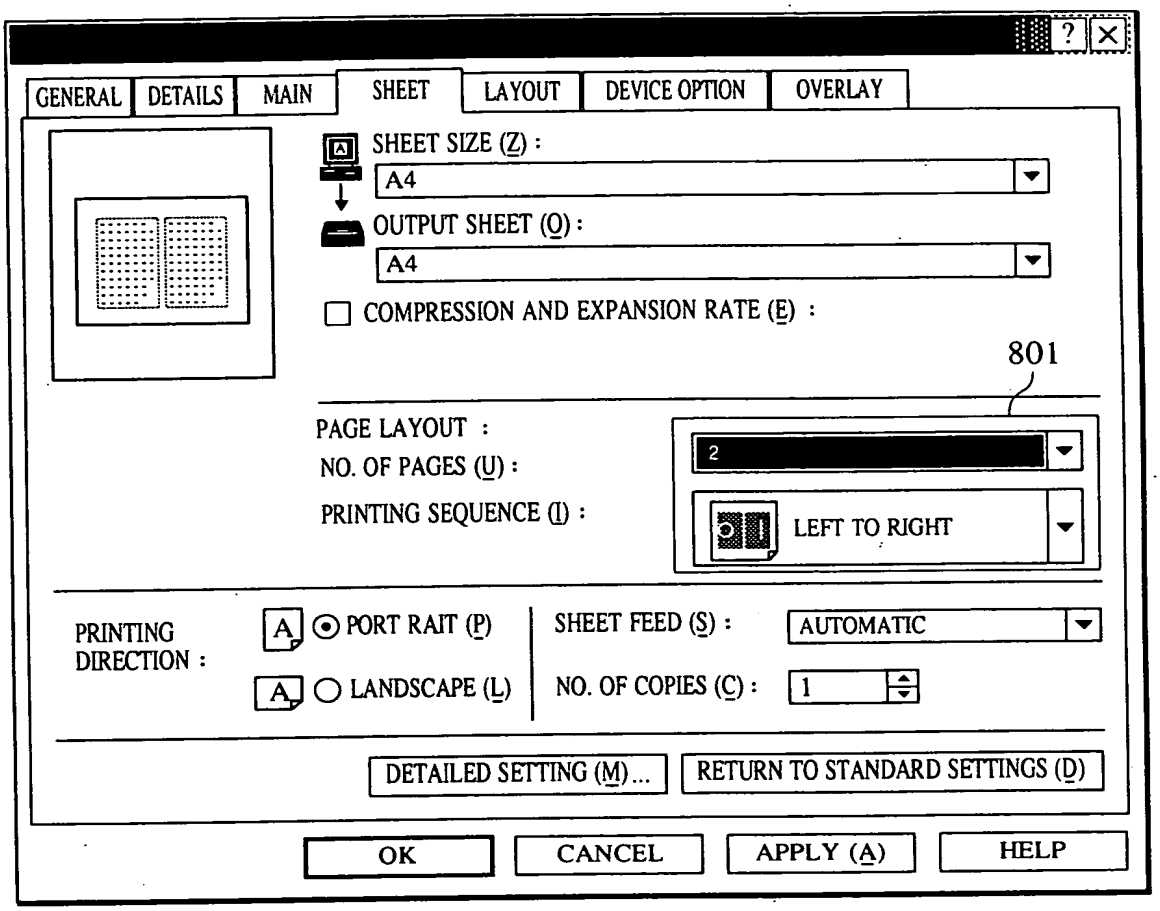
GENERAL
DETAILS
MAIN
SHEET
LAYOUT
DEVICE OPTION
OVERLAY
SHEET SIZE (Z) :
A4
OUTPUT SHEET (O) :
A4
COMPRESSION AND EXPANSION RATE (E) :
801
PAGE LAYOUT :
NO. OF PAGES (U) :
PRINTING SEQUENCE (I) :
2
LEFT TO RIGHT
PRINTING DIRECTION :
PORT RAIT (P)
LANDSCAPE (L)
SHEET FEED (S) :
AUTOMATIC
NO. OF COPIES (C) :
1
DETAILED SETTING (M)...
RETURN TO STANDARD SETTINGS (D)
OK
CANCEL
APPLY (A)
HELP

FIG. 8

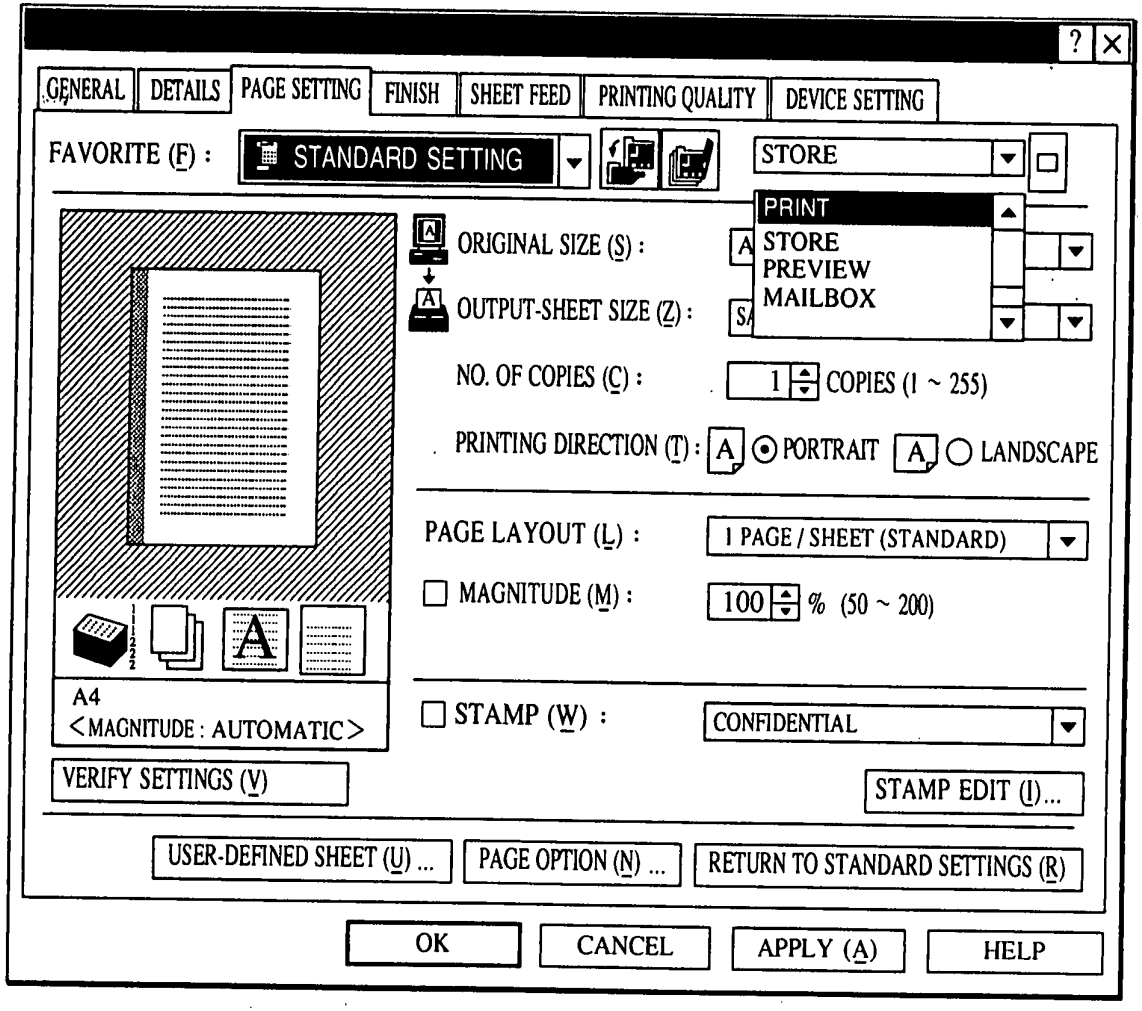
GENERAL
DETAILS
PAGE SETTING
FINISH
SHEET FEED
PRINTING QUALITY
DEVICE SETTING
FAVORITE (F) :
STANDARD SETTING
STORE
PRINT
STORE
PREVIEW
MAILBOX
ORIGINAL SIZE (S) :
OUTPUT-SHEET SIZE (Z) :
NO. OF COPIES (C) :
1
COPIES (1 ~ 255)
PRINTING DIRECTION (T) :
PORTRAIT
LANDSCAPE
PAGE LAYOUT (L) :
1 PAGE / SHEET (STANDARD)
MAGNITUDE (M) :
100
% (50 ~ 200)
A4
<MAGNITUDE : AUTOMATIC>
STAMP (W) :
CONFIDENTIAL
VERIFY SETTINGS (V)
STAMP EDIT (I)...
USER-DEFINED SHEET (U) ...
PAGE OPTION (N) ...
RETURN TO STANDARD SETTINGS (R)
OK
CANCEL
APPLY (A)
HELP

FIG. 9

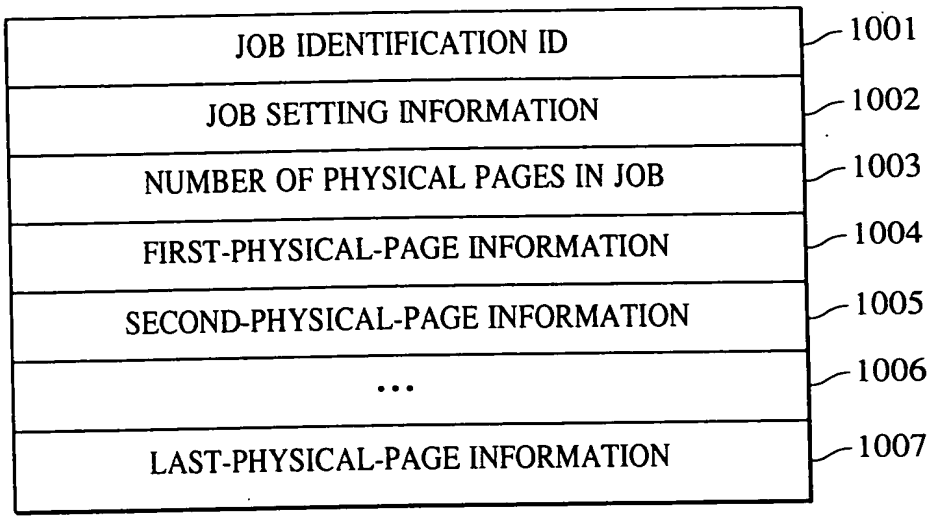
JOB IDENTIFICATION ID
1001
JOB SETTING INFORMATION
1002
NUMBER OF PHYSICAL PAGES IN JOB
1003
FIRST-PHYSICAL-PAGE INFORMATION
1004
SECOND-PHYSICAL-PAGE INFORMATION
1005
...
1006
LAST-PHYSICAL-PAGE INFORMATION
1007

FIG. 10

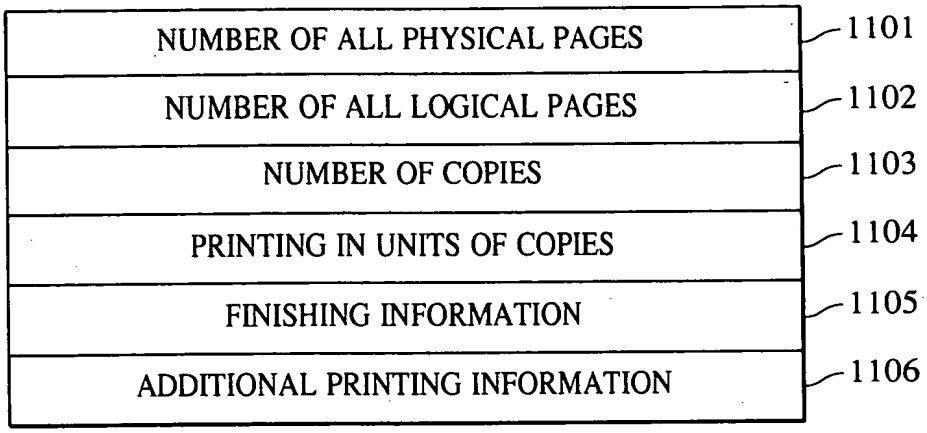
NUMBER OF ALL PHYSICAL PAGES
1101
NUMBER OF ALL LOGICAL PAGES
1102
NUMBER OF COPIES
1103
PRINTING IN UNITS OF COPIES
1104
FINISHING INFORMATION
1105
ADDITIONAL PRINTING INFORMATION
1106

FIG. 11

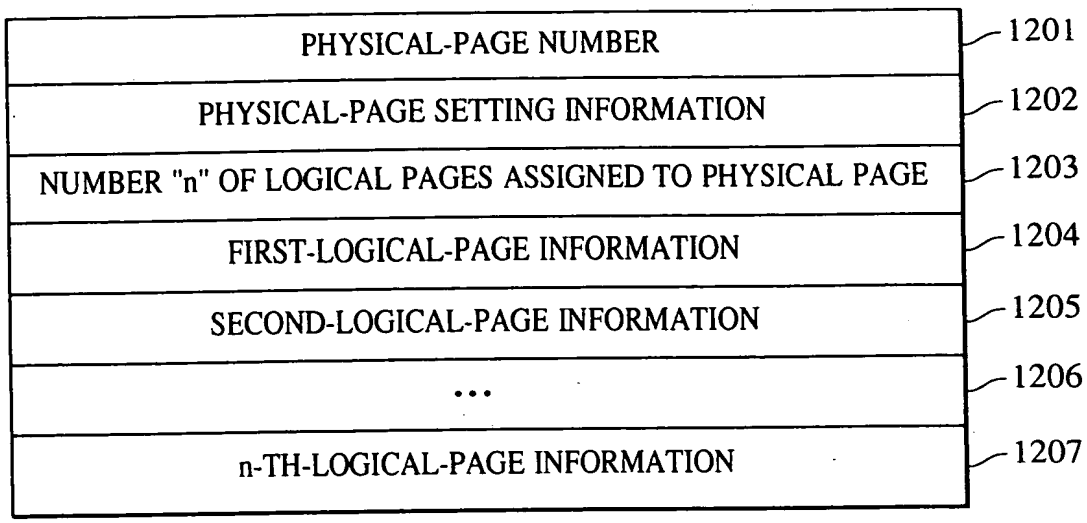
PHYSICAL-PAGE NUMBER
1201
PHYSICAL-PAGE SETTING INFORMATION
1202
NUMBER "n" OF LOGICAL PAGES ASSIGNED TO PHYSICAL PAGE
1203
FIRST-LOGICAL-PAGE INFORMATION
1204
SECOND-LOGICAL-PAGE INFORMATION
1205
...
1206
n-TH-LOGICAL-PAGE INFORMATION
1207

FIG. 12

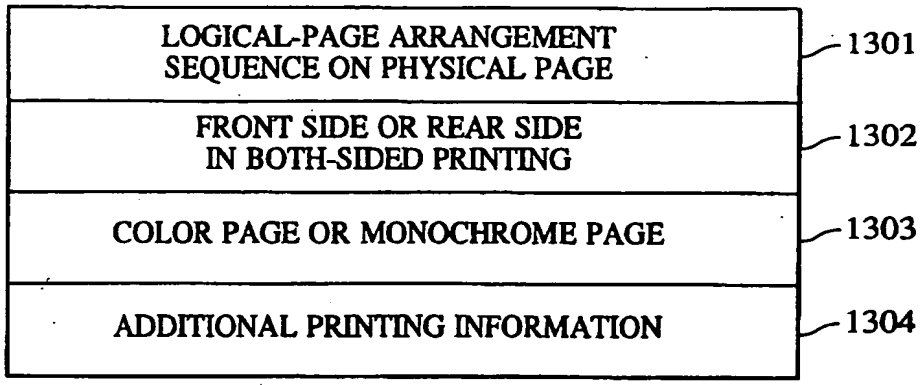
LOGICAL-PAGE ARRANGEMENT SEQUENCE ON PHYSICAL PAGE
1301
FRONT SIDE OR REAR SIDE IN BOTH-SIDED PRINTING
1302
COLOR PAGE OR MONOCHROME PAGE
1303
ADDITIONAL PRINTING INFORMATION
1304

FIG. 13

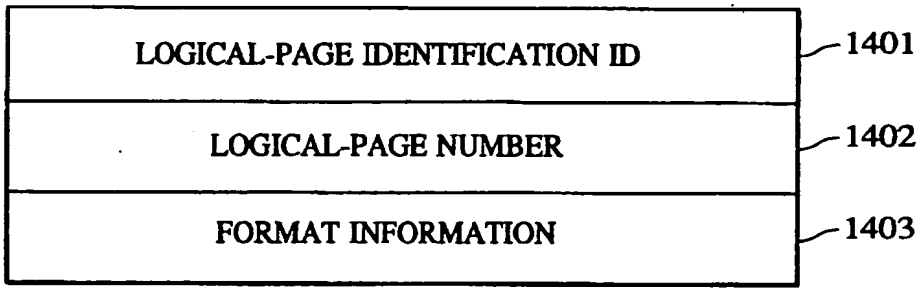
LOGICAL-PAGE IDENTIFICATION ID
1401
LOGICAL-PAGE NUMBER
1402
FORMAT INFORMATION
1403

FIG. 14

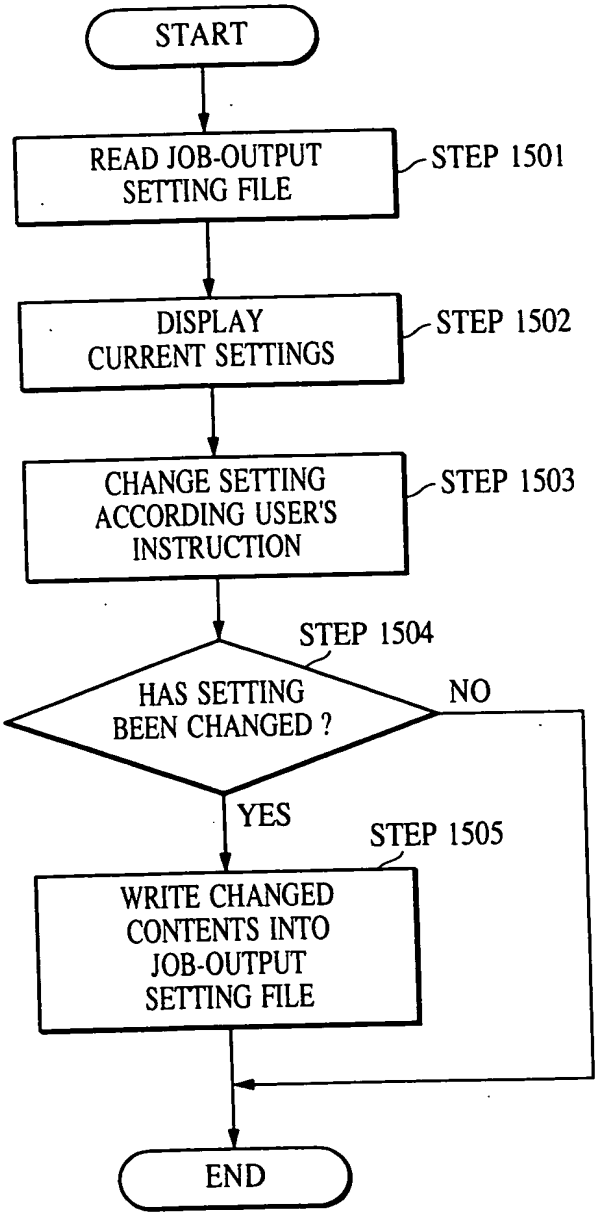
START
READ JOB-OUTPUT SETTING FILE
STEP 1501
DISPLAY CURRENT SETTINGS
STEP 1502
CHANGE SETTING ACCORDING USER'S INSTRUCTION
STEP 1503
STEP 1504
HAS SETTING BEEN CHANGED ?
NO
YES
STEP 1505
WRITE CHANGED CONTENTS INTO JOB-OUTPUT SETTING FILE
END

FIG. 15

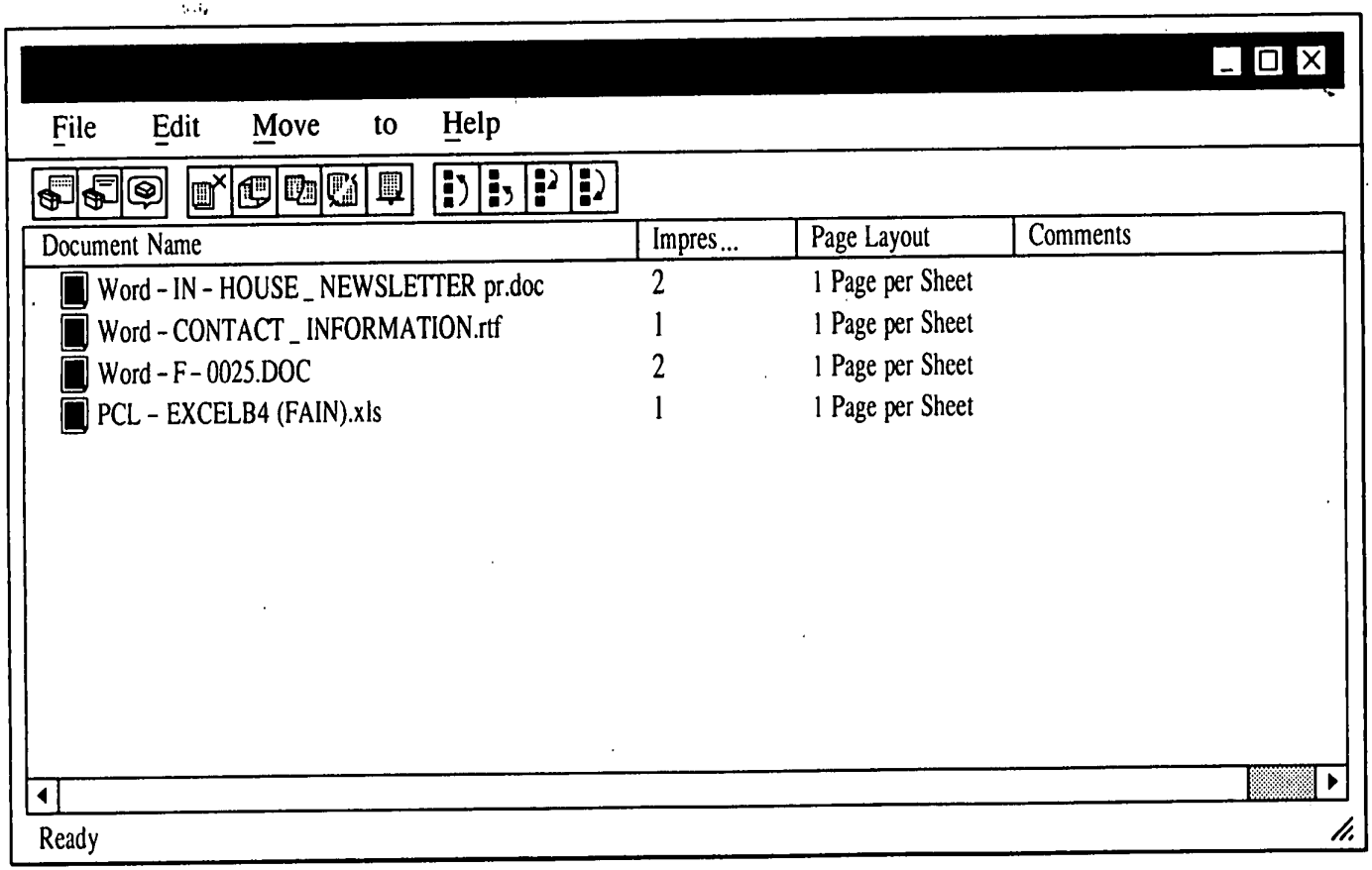
File Edit Move to Help
Document Name
Impres...
Page Layout
Comments
Word - IN - HOUSE_NEWSLETTER pr.doc
2
1 Page per Sheet
Word - CONTACT_INFORMATION.rtf
1
1 Page per Sheet
Word - F - 0025.DOC
2
1 Page per Sheet
PCL - EXCELB4 (FAIN).xls
1
1 Page per Sheet
Ready

FIG. 16

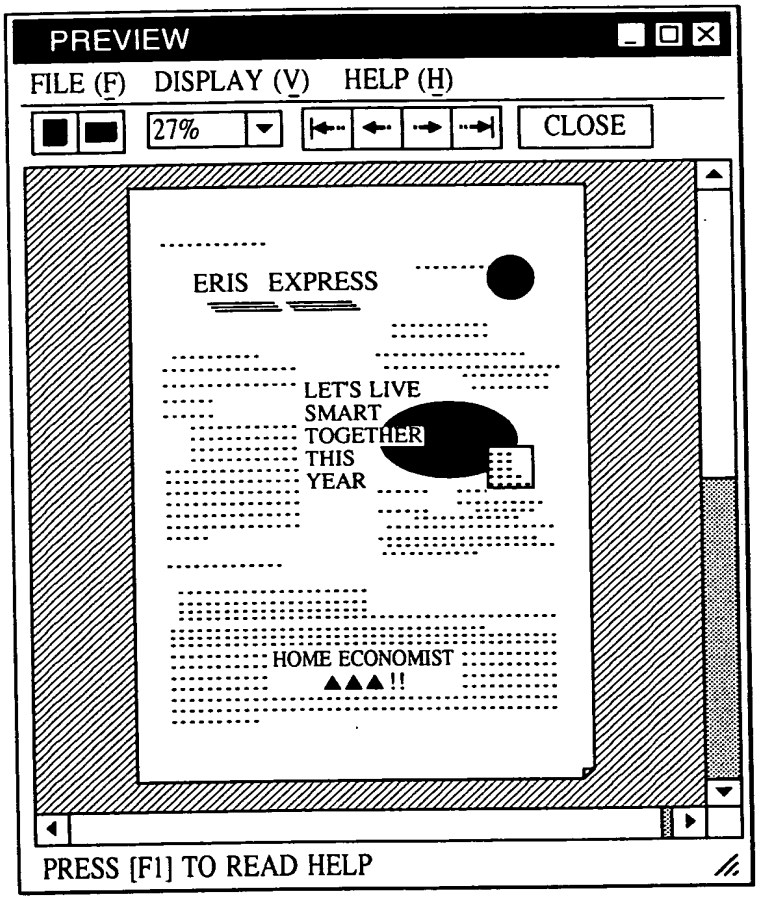
PREVIEW
FILE (F) DISPLAY (V) HELP (H)
27%
CLOSE
ERIS EXPRESS
LET'S LIVE
SMART
TOGETHER
THIS
YEAR
HOME ECONOMIST
▲▲▲!!
PRESS [F1] TO READ HELP

FIG. 17

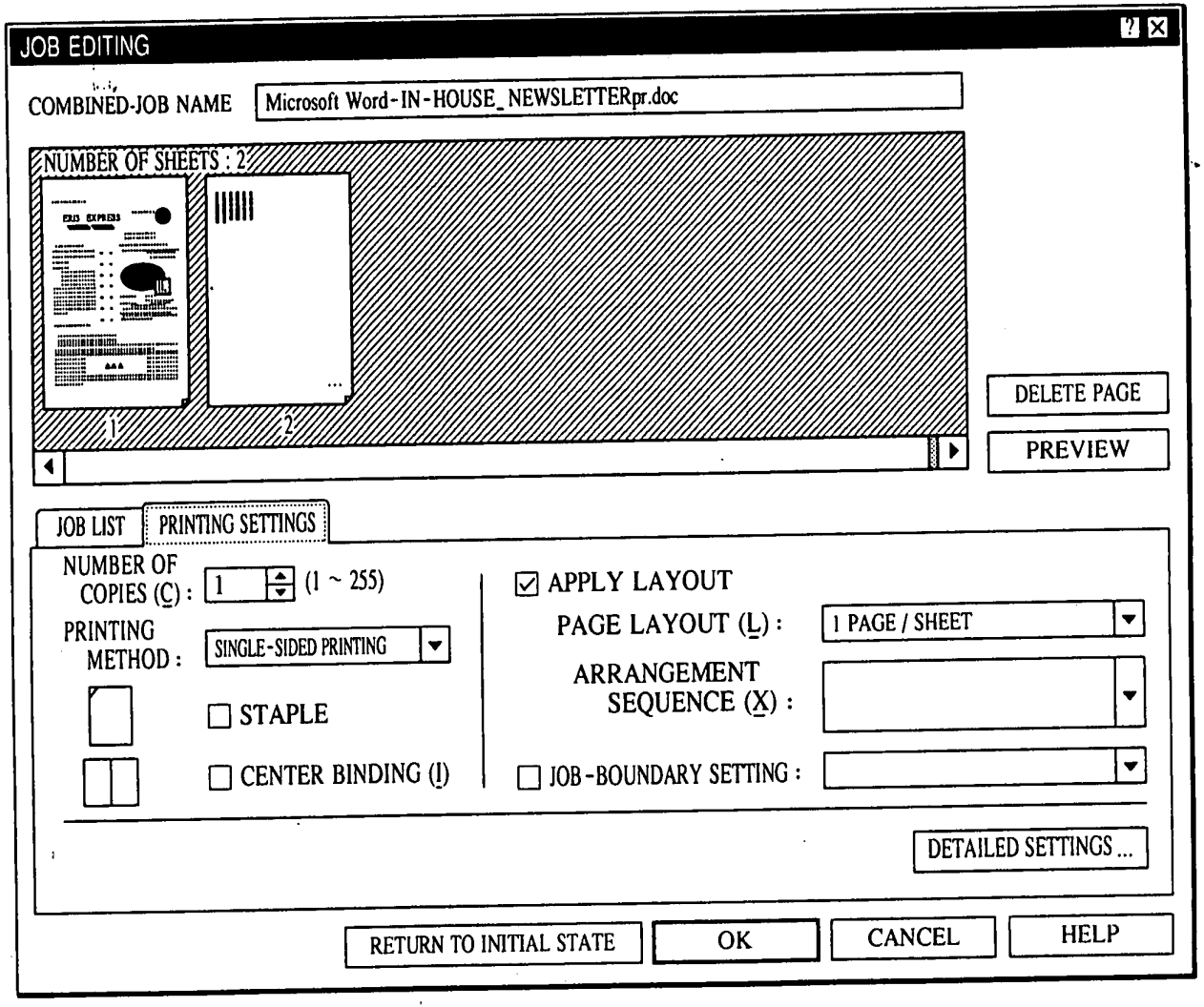
JOB EDITING
COMBINED-JOB NAME
Microsoft Word-IN-HOUSE_NEWSLETTERpr.doc
NUMBER OF SHEETS : 2
1
2
DELETE PAGE
PREVIEW
JOB LIST
PRINTING SETTINGS
NUMBER OF COPIES (C) :
1
(1 ~ 255)
PRINTING METHOD :
SINGLE-SIDED PRINTING
STAPLE
CENTER BINDING (I)
APPLY LAYOUT
PAGE LAYOUT (L) :
1 PAGE / SHEET
ARRANGEMENT SEQUENCE (X) :
JOB-BOUNDARY SETTING :
DETAILED SETTINGS ...
RETURN TO INITIAL STATE
OK
CANCEL
HELP

FIG. 18

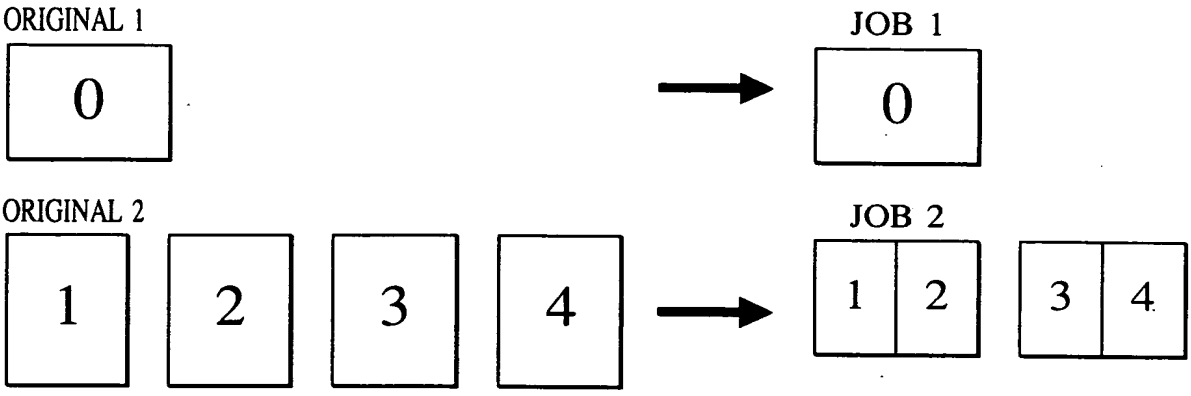

FIG. 19

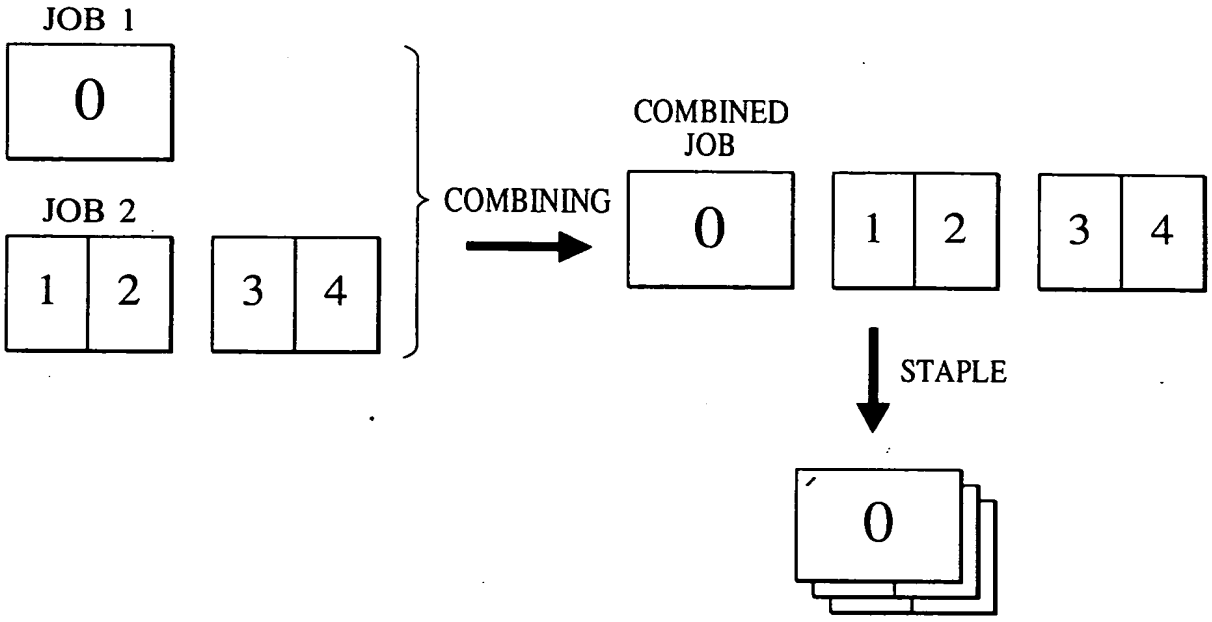

FIG. 20

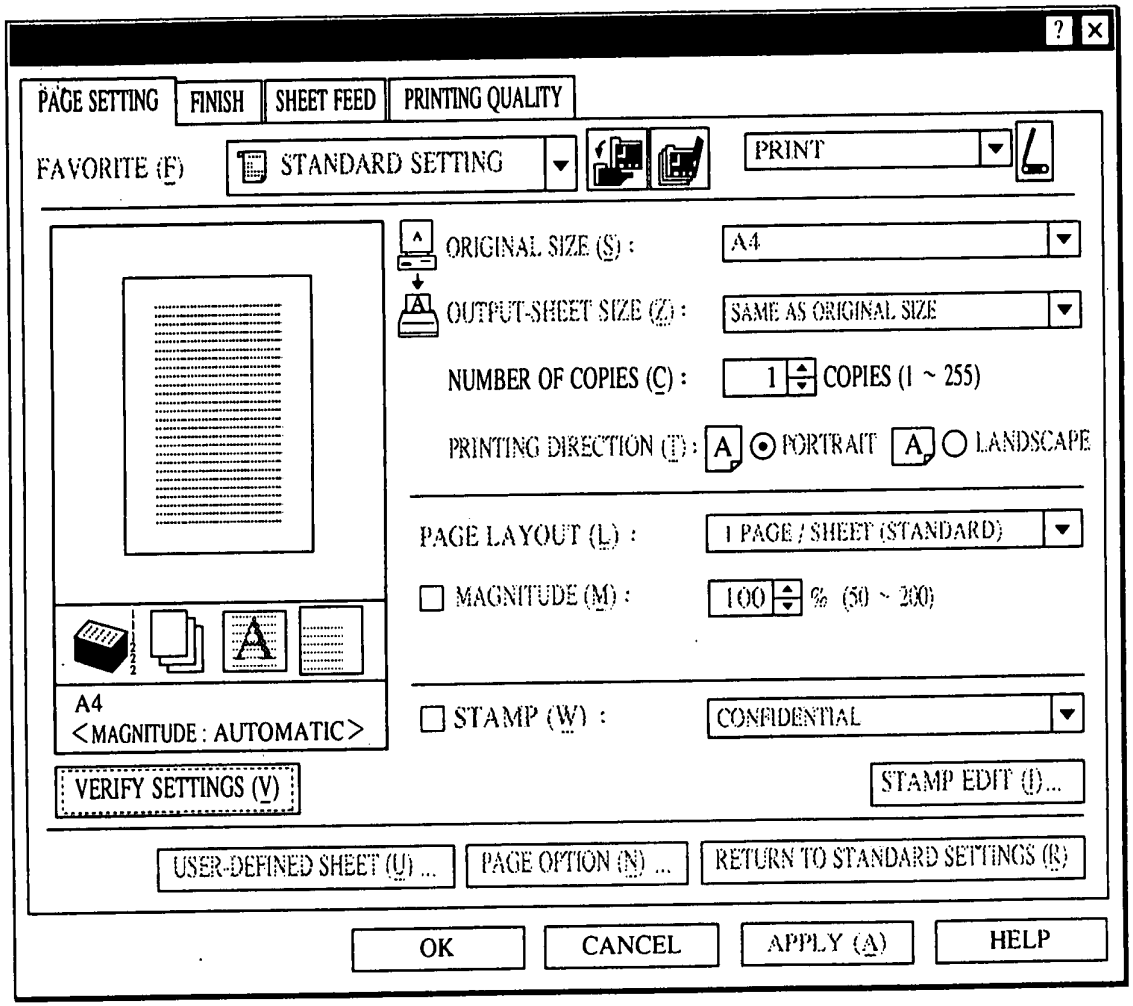
PAGE SETTING
FINISH
SHEET FEED
PRINTING QUALITY
FAVORITE (F)
STANDARD SETTING
PRINT
ORIGINAL SIZE (S) :
A4
OUTPUT-SHEET SIZE (Z) :
SAME AS ORIGINAL SIZE
NUMBER OF COPIES (C) :
1
COPIES (1 ~ 255)
PRINTING DIRECTION (T) :
PORTRAIT
LANDSCAPE
PAGE LAYOUT (L) :
1 PAGE / SHEET (STANDARD)
MAGNITUDE (M) :
100
% (50 ~ 200)
A4
<MAGNITUDE : AUTOMATIC>
STAMP (W) :
CONFIDENTIAL
VERIFY SETTINGS (V)
STAMP EDIT (I)...
USER-DEFINED SHEET (U) ...
PAGE OPTION (N) ...
RETURN TO STANDARD SETTINGS (R)
OK
CANCEL
APPLY (A)
HELP

FIG. 21A

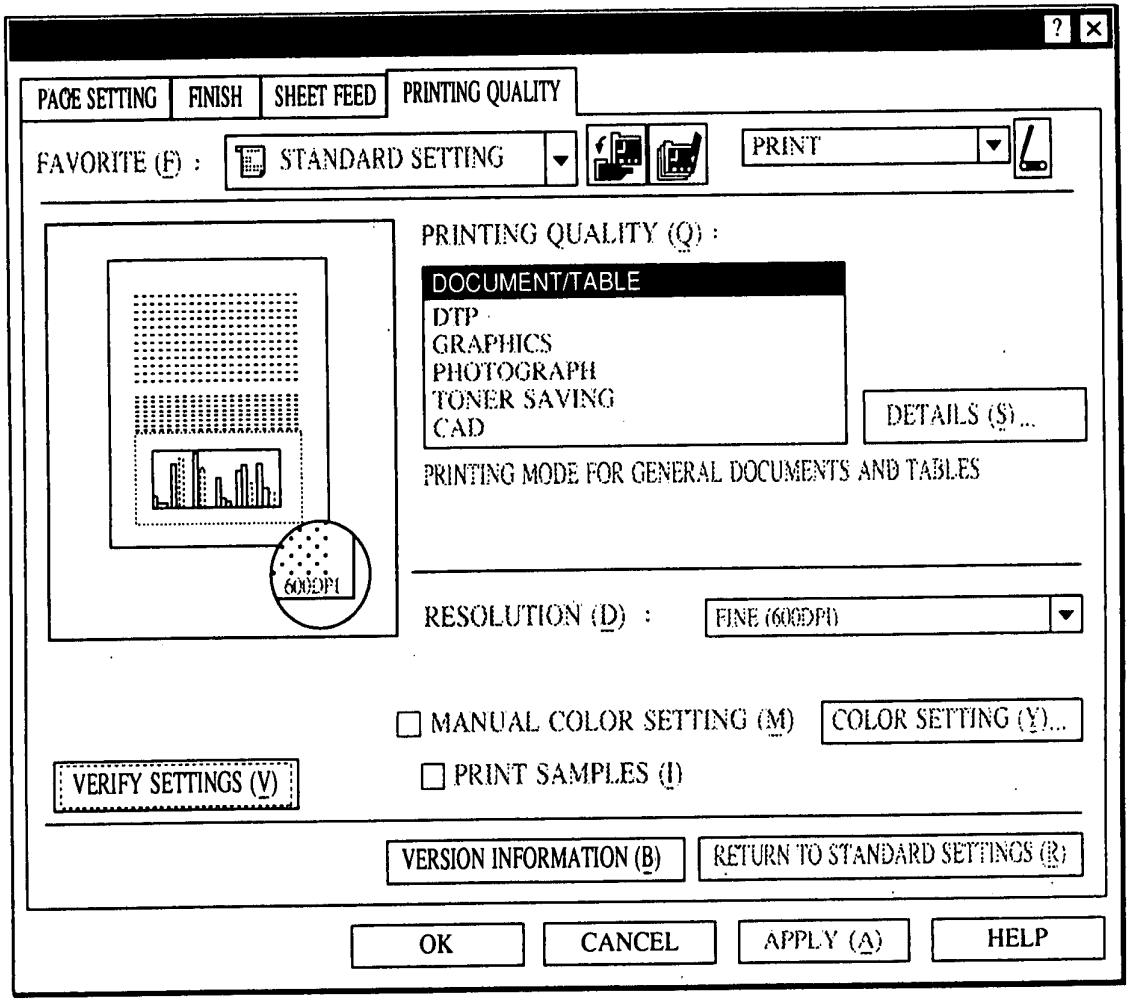
PAGE SETTING
FINISH
SHEET FEED
PRINTING QUALITY
FAVORITE (F) :
STANDARD SETTING
PRINT
PRINTING QUALITY (Q) :
DOCUMENT/TABLE
DTP
GRAPHICS
PHOTOGRAPH
TONER SAVING
CAD
DETAILS (S)...
PRINTING MODE FOR GENERAL DOCUMENTS AND TABLES
600DPI
RESOLUTION (D) :
FINE (600DPI)
MANUAL COLOR SETTING (M)
COLOR SETTING (Y)...
VERIFY SETTINGS (V)
PRINT SAMPLES (I)
VERSION INFORMATION (B)
RETURN TO STANDARD SETTINGS (R)
OK
CANCEL
APPLY (A)
HELP

FIG. 21B

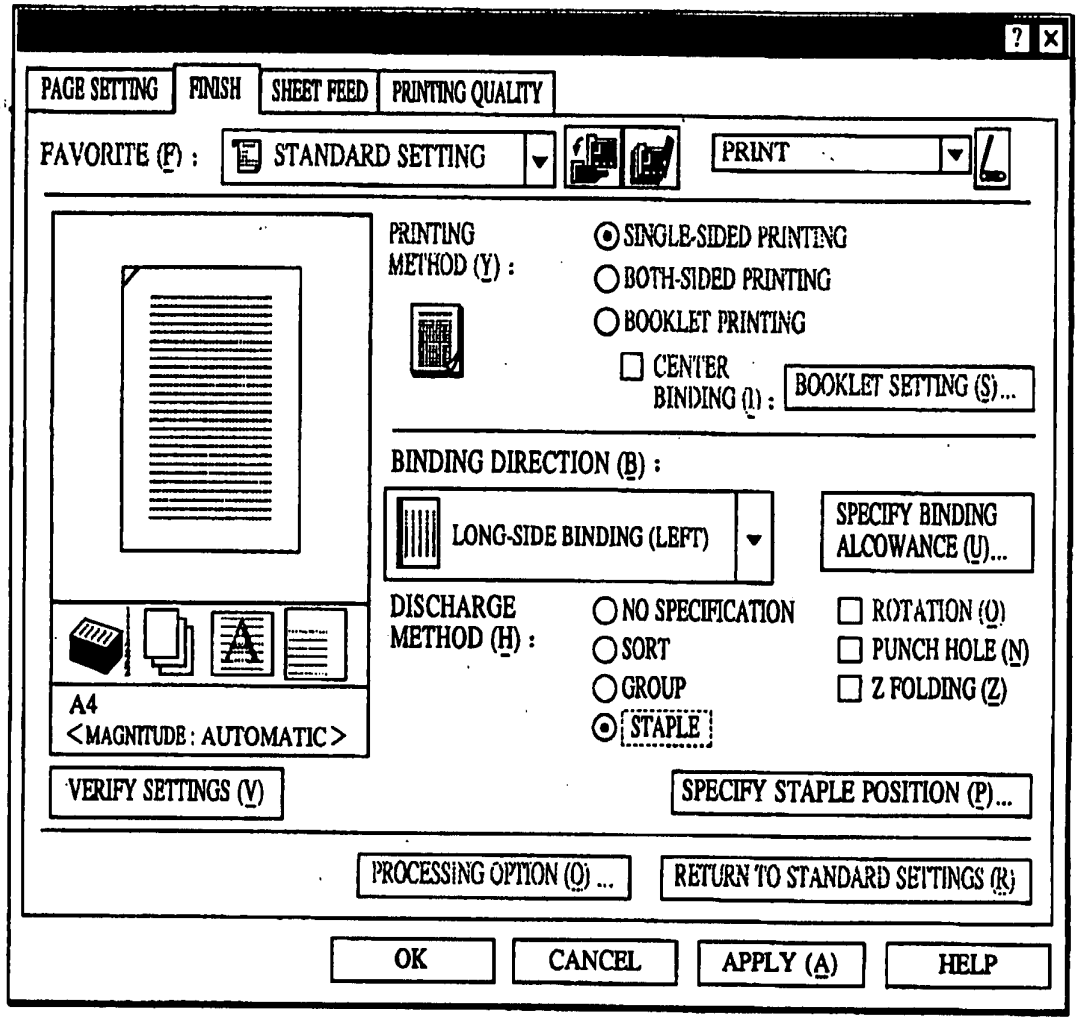
PAGE SETTING
FINISH
SHEET FEED
PRINTING QUALITY
FAVORITE (F) :
STANDARD SETTING
PRINT
PRINTING METHOD (Y) :
SINGLE-SIDED PRINTING
BOTH-SIDED PRINTING
BOOKLET PRINTING
CENTER BINDING (I) :
BOOKLET SETTING (S)...
BINDING DIRECTION (B) :
LONG-SIDE BINDING (LEFT)
SPECIFY BINDING ALCOWANCE (U)...
DISCHARGE METHOD (H) :
NO SPECIFICATION
SORT
GROUP
STAPLE
ROTATION (O)
PUNCH HOLE (N)
Z FOLDING (Z)
A4
<MAGNITUDE : AUTOMATIC>
VERIFY SETTINGS (V)
SPECIFY STAPLE POSITION (P)...
PROCESSING OPTION (O) ...
RETURN TO STANDARD SETTINGS (R)
OK
CANCEL
APPLY (A)
HELP

FIG. 21C

0050-1-1500-0

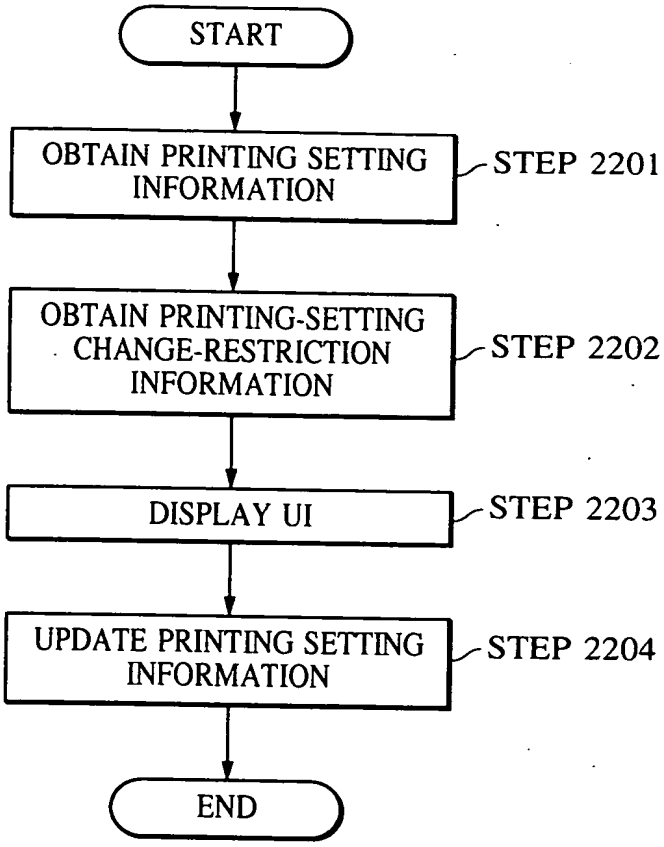

FIG. 22

PRINTING-SETTING CHANGE-RESTRICTION INFORMATION =

0 : NO RESTRICTION
1 : RESTRICT LAYOUT
2 : RESTRICT QUALITY
4 : .....

FIG. 23

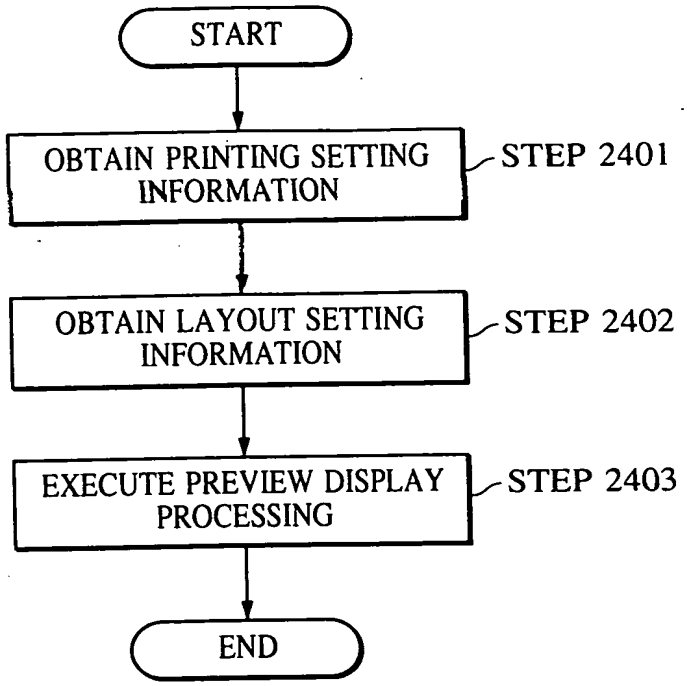

FIG. 24

API GetLayout Info (iMode, pDevMode, pInfo)

iMode : SPECIFY PROCESSING MODE
1 : LAYOUT PROCESSING AT HOST
2 : LAYOUT PROCESSING AT PRINTER

pDevmode : POINTER TO PRINTING SETTING INFORMATION

pInfo : POINTER TO LAYOUT INFORMATION

FIG. 25